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World Chronicle

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GUEST: **HANS BLIX**
Director-General
International Atomic Energy Agency (IAEA)

JOURNALISTS: Tuyet Nguyen, United Press International
Raghida Dergham, *Al-Hayat* (London)

MODERATOR: Michael Littlejohns

INTERNATIONAL ATOMIC ENERGY AGENCY

HANS BLIX, Director-General of the International Atomic Energy Agency (IAEA), discusses a number of issues related to nuclear energy and the work of IAEA. The increasing cooperation between the nuclear weapon states in peacekeeping, disarmament and non-proliferation matters constitutes an encouragement to the work of the agency and the use of nuclear energy for peaceful purposes. IAEA has initiated an aid programme to assist former Soviet Republics and Russia to up-grade their nuclear reactors to meet international standards. Mr. Blix states that Iraq is no longer capable of producing nuclear weapons.

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Executive Producer:	Kamil Taha
Director:	Ivan Stoynov
Production Assistant:	Ellen McGuffie

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ANNOUNCER: From United Nations Headquarters in New York, this is **World Chronicle**, an unedited interview programme about major global issues. Here now to introduce our guest is the host of today's **World Chronicle**.

LITTLEJOHNS: I'm Michael Littlejohns, and this is **World Chronicle**.

Perhaps no 20th century innovation has had more far-reaching impact on humanity than the discovery of nuclear energy. But it can be a blessing and a menace at the same time. Countries endeavour to possess this energy for both military and peaceful purposes. To safeguard the use of this unique but deadly energy, the world community established the International Atomic Energy Agency, or the IAEA, in 1957.

Our guest today has a special interest in the issue of nuclear energy. He is Hans Blix, Director-General of the IAEA. Joining me to speak with Mr. Blix are Tuyet Nguyen of United Press International and Raghida Dergham of *Al-Hayat* of London. Mr. Blix, welcome to World Chronicle.

Mr. Director-General, I'm sure that - well, I dare say that my colleagues will be asking you questions about Korea, Iraq, and various other places that have presented problems. I'd like to ask you about the problem of the proliferation of nuclear material in terrorist hands, or the hands of private individuals who might use the stuff for nefarious purposes. With the break-up of the Soviet Union, the presence of a lot of nuclear stuff in the former Soviet Republics has caused some problems, I believe. What is IAEA doing about that?

BLIX: Well, first of all, I'm glad to tell you that we have not seen any one case where terrorists have got hold of any such material from nuclear-weapon states, but one cannot exclude that it could happen. But this material is not so easy to handle, and I would think that for most of the criminals who are dealing with this that think they'll get money for it, their chances are rather they'll get irradiated. And we have actually seen several cases where they've been handling nuclear material like cesium and where accidents have happened to them. We have not seen any case so far where the military stockpiles have been involved on the Soviet side, which indicates that they're still well guarded. But it is evident that with this more material that is out in the market that other institutions like laboratories of various kinds are not so disciplined as they used to be. And the governments in question are the ones who take the first steps in order to strengthen control.

As to the IAEA, I'm going to organize in November, next month, a round table in which we invite our governments to discuss what measures exactly can we take. And there are a couple of them that are evident. We can help the governments in question to prevent the disappearance of this material from the sources. And for that you need

good accounting systems, you need good control systems. And secondly, you also need to know how to apply physical security, physical control; and we will do that as well, provided resources are given to us. The third thing we can do is to keep a check, to be a data bank for what's going on. We already now monitor the media for all the cases that come to the media, and we then turn to the governments and ask what actually happened. And I am glad to tell you that there is often a difference between the media and the reality. There is a lot more smoke than there is fire, but there is still some fire, and therefore measures have to be taken.

DERGHAM: On the same subject, recently there was a television programme in the United States which showed that there was some equipment that was basically available for a car dealer to purchase, and then they discovered that it was rather dangerous, and apparently that car dealer got a lot of phone calls from several governments interested in these pipes that would be used for nuclear devices. Have you been -- are you familiar with this event, and how do you make sure that it doesn't happen as a matter of bureaucratic waste?

BLIX: I'm not sure about that particular case, but there are lots of materials in this world which have what we call dual use. And it is, of course, for governments to make sure through their export controls that material that can be made use of in terms of making nuclear weapons, that there will be strict control on their exports.

DERGHAM: And have you got the list of countries who have been recently interested in acquiring from the black market nuclear devices or technology? Have you compiled a list of the countries?

BLIX: No, I think it is in the nature of things that countries that do that will do it in very surreptitious ways, so that will not be too visible. But we know, however, that, before the Iraqi affair, Iraq was purchasing various things in the international market -- the krytrons that were seized at London airports, and so forth. So there is some outlook for that. But what I want to say, nevertheless, is that people imagine that there are a whole lot of countries out there, as they say, who are eager to build nuclear weapons. I think that's wrong. I think the major picture is really that non-proliferation has been a success story. There is no treaty in the world that is as well adhered to, or as much adhered to as the Non-Proliferation Treaty. You may ask whether everyone abides by it, but we have had Argentina and Brazil joining, well, not the NPT, but that local treaty; Algeria has recently declared that they will join the Non-Proliferation Treaty; South Africa did, and rolled back from a nuclear weapons status. So one should not forget this brighter side of the picture. I don't think there are a whole lot of countries looking out, but there could be one or two, and that's bad enough.

NGUYEN: Dr. Blix, in the case of North Korea and its nuclear programme, there has been talk of switching a graphite reactor to light water. Can you explain the difference between the two and why the US is insisting so much that North Korea's nuclear programme be switched to light water?

BLIX: Yes. The graphite moderator reactors that they have built by their own technology are a type that lends itself well to plutonium production and to production of plutonium isotopes that are good for weapons making. And that is the reason why the US and others would think it would be much preferable if North Korea switched and turned to light water reactors, which do not as easily produce plutonium. You have to operate them for a much shorter time and it doesn't fit with their energy production.

NGUYEN: But what about reactors in India, Pakistan, for example, in China? They're not run by light water, and yet the -- I mean, the nuclear powers cannot do anything to stop them producing, let's say, nuclear-weapons-grade material.

BLIX: Well, it varies. In the case of China, they have light water reactors that they built with their own technology, and they have imported two light water reactors of French technology. India has reactors of what is called the on-line type, where they can switch the fuel very frequently. They are perhaps a bit more proliferation prone, if they want so to use them. But the dominant type of reactor in the world is the light water reactor, and that is not very proliferation prone. It's not so easy to make plutonium from it.

DERGHAM: Let me take you back to the success story of non-proliferation, and let me take the Middle East as an example. Obviously the United Nations succeeds, or the IAEA, in fact, has succeeded in keeping track of the Iraqi nuclear programmes through, of course, after the Gulf war and the disarmament that has happened through the process of the resolutions. There is another country, Israel, that is said to have nuclear capability and a nuclear device, and to my knowledge Israel is not a party to IAEA. Can you explain that before I go on?

BLIX: No, they are a member of the IAEA, but they are not a party to the Non-Proliferation Treaty. That is to say they have never made a commitment under that treaty not to acquire nuclear weapons. And it's well known that they have the capacity to make plutonium. What is beyond that, I have no official knowledge of. But it's clear that the constructive approach to the Middle East is a nuclear-weapon-free zone. And that is being discussed, and in fact all the countries, including Israel, support that concept. And also Iraq supports that concept. I don't personally think that you can have such a zone except as a part of a peaceful settlement of the Middle East. On the other hand, I find it very hard to think that you can have a durable, sustainable peaceful

settlement without a nuclear-weapon-free zone. And we are talking, from the IAEA side, with the countries in the Middle East, including Israel, about how would a verification system function in that area.

DERGHAM: Let me follow up, if you will permit me.

BLIX: Please.

DERGHAM: Now, Israel does not permit your agency to come in and check its facilities, and Israel has maintained that it needs the nuclear capability -- it does not admit it has it, but it is as a deterrent. Now, in terms of talking peace and the resolution of the Security Council that speaks of handling the area altogether, starting out with making sure that the Iraqis do not have weapons of mass destruction, you have an authority -- can you force countries of the region, Israel and others, to open up their doors for you so that one can really find out what's going on in these countries in terms of nuclear capability?

BLIX: No. You know, you should know that we live in an international community of sovereign states, and you cannot force any state to open up its closets without its consent. A country like Algeria has not been a party to the Non-Proliferation Treaty, except now they plan to do so, and then they will have to open, or be obliged to open all their nuclear facilities. South Africa also did not admit us to all their installations until they joined that treaty. So, for Israel, that has not joined the NPT, they don't have an obligation to open up. Iraq had, because they had joined it. Now, it's not quite true to say that Israel doesn't open anything, because they have some facilities which they have purchased on the condition that they open them for inspection, so we do perform some inspection there. But we are certainly not visiting their supplies of plutonium.

DERGHAM: Who else in the region does not allow you to visit them or does not welcome you? Besides Israel.

BLIX: Well, there are some states -- Saudi Arabia, if I remember rightly, has joined the NPT but has not yet made a safeguards agreement. Yemen also has not. Syria did a safeguards agreement with us recently. There are a few others. But most of the states in the region, Arab states, have joined the NPT and have safeguards agreements with us, including Egypt.

NGUYEN: In the case of Iraq, Dr. Blix, what is its capability now to produce nuclear weapons, after three years of inspections and elimination programme of the IAEA and the UN Special Commission? Where does it stand now in terms of weapons production?

BLIX: Well, in our judgement -- and we have been there for a great many missions, and we have had very technical means to examine the Iraqi territory, including environmental sampling, et cetera -- they have no infrastructure to make nuclear weapons or nuclear weapons material, like enriched uranium, at the present time. What they had -- they had enriched uranium for their research reactor -- has been sent out of Iraq, and installations, huge infrastructures which could have been used for weapons production have been destroyed or rendered harmless. So there is no infrastructure left. And we have good cooperation with the Iraqis on allowing the inspections and in allowing the long-term monitoring. We have installed a lot of equipment for that monitoring. What you never can do away with is the intelligence, the know-how. The engineers, the scientists are there, maybe programmes and computers, et cetera, are still there. This you cannot do. But you do not make nuclear weapons with those. You must have an infrastructure, and that is not there.

DERGHAM: Explain then, Mr. Blix, why is it that every time there is a crisis with Iraq we are told that, you know, the Iraqis are just about to regain and reacquire nuclear capability? Can you explain that?

BLIX: I don't think we say that. On the contrary, we have been saying for a long time that the capability that existed for enriching uranium is no longer there. The enriched uranium they had, we have shipped out all of it from the country. And for the long-term monitoring, all the equipment is in place. The only reservation I will say is that their engineers, scientists, maybe computer programs can still be there, but you don't make weapons with that.

NGUYEN: Can you say that Iraq is now totally disarmed, even though probably it still has its scientific knowledge of producing weapons?

BLIX: Yes, as far as we ever can come. We have had the opportunity to examine how they built up the programme, the procurement; we understand very well how each of these steps has developed; and we can say that it is not, and there is no capacity left.

NGUYEN: In this case can we say that Iraq has met most of the UN resolutions dealing with the Gulf war?

BLIX: Let me only pronounce myself for the area for which I have responsibility, that's the nuclear one; they also have a responsibility to dismantle, do away with the chemical weapons, with the biological weapons, and with the missiles, and I'm not pronouncing myself at all about that.

DERGHAM: The long-term monitoring that will be taking place in Iraq, that involves also nuclear. So you spoke of the scientists. They really cannot do much if the long-term monitoring is taking place, right?

BLIX: No, they should not.

DERGHAM: They shouldn't. And if you were to take Iraq and Iran as two countries in the region, and if you were to estimate their capabilities now, nowadays, how do you compare the two?

BLIX: Well, in Iraq you have none of these activities. You don't even have a research reactor operating. In Iran, you have a research reactor, you have a lot of nuclear laboratories, et cetera. On the other hand, there has never been any evidence that, in the safeguards field, that they have been misusing it. The Iranians have been very open to us so far; they tell us, if you want to go to this place or that place, just tell us and we will invite you; and we have done so on a couple of occasions. So we have never had any occasion to be displeased with the kind of cooperation we had in the safeguards field with Iran.

LITTLEJOHNS: This is World Chronicle. Our guest is Hans Blix, Director-General of the International Atomic Energy Agency. Mr. Blix, what is IAEA doing to help the former Soviet Republics divert their nuclear reactors to peaceful purposes?

BLIX: Well, you have there -- Ukraine is the country of the former Soviet Union that has the most of nuclear power, and they have quite a lot of power reactors, including Chernobyl, where two reactors are still operating. And they have a number of reactors built on light water. And they have a very poor economic situation. So the reactor that gives the public and us the most concern, I would say, is the Chernobyl reactor, because there you have a fairly high level of radioactivity, and they have not had the resources to bring in new spare parts to the extent that would be necessary. And we have assistance programmes with them, and the European Community and others also have programmes, to assist them to come up to an acceptable international standard.

I would say that in some of the other countries, like say Bulgaria, which I visited very recently, a few years ago our people went there; our experts who went there were very dismayed and concerned at the standard of safety that they watched, and we struck the alarm. We are not a regulatory agent that can stop anybody from pursuing use in their nuclear reactors, but we struck the alarm. And since then a great deal of things have been done in Bulgaria. When I now was there, the feeling was that here was a very dedicated crew, still operating old reactors, mind you, but as I explained to them, it's like having a car from, say, 1955: it doesn't have any ABS, it may not have any safety belts, it doesn't have any catalysers, but if you maintain a proper maintenance on it, if you drive

it carefully and you have a good crew, you can still drive it safely. Nevertheless, as soon as you can afford something better, you will probably want to exchange it for something better.

LITTLEJOHNS: You have long been an advocate of nuclear power for the production of electricity. Would you think that the negative response to Chernobyl and to Three Mile Island was perhaps a bit exaggerated? Because here in the United States, for example, there's been practically no development of nuclear energy for quite a long time, and, in fact, plants have been shut down, reactors have been shut down in response to public protests. Do you think this is overdone?

BLIX: Well, the stagnation in the US began long before Chernobyl; it began already at the time of Three Mile Island, and before that, actually. And so people are concerned, I think, mainly about three things: it's about the proliferation, it's about the safety and operation, and it's about the waste issue. On all these three issues, I think that we are making very great strides forward. The proliferation issue is largely positive, although there are still some severe problems. On the safety issue, we are seeking to establish something you could call an international nuclear safety culture, which brings everybody along, because if only one reactor is in very poor shape, or handled badly, that is enough. On the waste issue, there is still a lot of popular resentment and objection to any waste site, which I think is exaggerated.

I don't think that the reaction to Chernobyl is exaggerated in the sense that a reactor must not be run in the way it was run there. And there are contamination problems after it, not of the size that many of the reports are, but they can nevertheless, by no means, be explained away or be belittled. I think personally that nuclear generation of electricity has some risks, as any other source -- if you have hydro-dams burst and gas pipelines explode; coal mines have lots of accidents and explosions, et cetera. So there is no way you can have electricity without some risk. To me, the risk of a global warming in the next century that will follow -- it's expected, and indeed I understand will follow if you continue the excessive use of reliance on fossil fuel that we have now -- to me, that is a greater risk than the very small risk that you run with nuclear power today. And my view is that the industrialized countries, the technologically advanced countries who can run these, who have the capacity, they should do it, and we should let some of the developing countries who are not at that level to use the simpler technology, which is fossil fuel.

LITTLEJOHNS: France seems to have managed very successfully. What's their secret?

BLIX: Yes, they -- well, one secret is that they have a standardized approach. That is to say they build all their nuclear power plants in large series, which makes it much cheaper, and they build them on time. You see, in the United States, for instance, the nuclear is often not economic, because they may have taken 13 years to build a reactor, and they have to pay the interest on the loans from the very first day they take the loans, but they don't get any revenue until they deliver electricity. Now, if you can build this plant in five years' time, or in six years' time, then the revenue is much better. That's what the French do, and the Koreans do.

NGUYEN: Dr. Blix, your agency is also involved in the irradiation of food. Can you tell us -- that's very controversial. Can you tell us or recommend whether we should use irradiated food, or -- ?

BLIX: Yes. It's getting a little less controversial, I am glad to say, because I think that the opposition to it is really on the wrong track. If you take spices, for instance, they used to fumigate spices in order to disinfect them and disinfest them. And then they discovered that some of these fumigants -- in fact, all they used -- were carcinogenic. And so it was prohibited by the American Food and Drug Administration, which instead allowed them to irradiate. And if they use radiation in the proper doses, they cannot see any effects, any negative effects of it at all. Similarly, if you take chicken, a certain number of salmonella cases occur each year because of people eating chicken that has been infected. And if you irradiate them, with the proper doses again, you have no negative effect and you avoid any risk of salmonella. So personally, I would rather have an irradiated chicken than one that was not.

NGUYEN: But does it concern mostly markets in the developed world? Because in poor countries they eat fresh produce.

BLIX: Let me take a case like Thailand. They have a particular kind of sausage that they all love. And that carried a lot of infestation, apparently, and they have now started to irradiate it with the proper doses. And I understand that it's rather popular.

DERGHAM: Before I take you back to the Middle East, I wanted to ask you about Pakistan-India, the dynamics of the relationship in terms of what you know and what you think the nuclear component is all about.

BLIX: Well, India advanced its nuclear programme after the controversy they had with China long ago, and they also exploded a device at some point, so it is understood that India would have the capacity if they wanted to go ahead on that line -- they say that they don't. Pakistan has gradually built up the capacity for enriching uranium, and it is assumed that they also could, if they would, get to a bomb status. They are trying to build up confidence between themselves and agreeing that they will

not attack each other's installations and so forth. And, I think, long-run again, one would have to look for a sort of tailor-made solution for that region, just as we do in the Middle East, or as we do on the Korean peninsula. So long as the Kashmir problem is so severe, I think emotions will make it difficult. And for India it is always not only the Pakistani question but it's also the larger question on nuclear disarmament.

But my hope, at any rate, is that once nuclear armament pushes further than it has done so far, and it involves all the nuclear-weapon states, including China, that India will also be more positive to joining some sort of scheme doing away with nuclear weapons.

DERGHAM: If the Kashmir problem is not resolved, are you worried about a large-scale engagement? And are you saying that the Kashmir problem has got to be resolved as a prerequisite for containing any possible nuclear unfortunate engagement?

BLIX: Well, I can't imagine that these two states would ever use nuclear weapons against each other. But at the same time I think it's very difficult to think that you will have a solution and actually roll back from the present capacity they have unless you also have a solution of the political situation.

DERGHAM: Speaking of solutions of political situations, you mentioned a little earlier the Middle East, and you thought that it's not very practical to have that nuclear-free zone that some countries in the region are speaking about. Obviously the countries in the Middle East are discussing peace, and it looks that it is likely to have peace treaty or peace in the region. What plans or what thoughts have you got in as far as moving towards dealing with the nuclear and other mass destruction weapons capabilities in terms of how do you deal with it in the peace era other than in the era of war?

BLIX: Well, when countries acquire weapons it's usually for a security purpose. And therefore the first effort to do away with nuclear or other weapons is to try to create a détente. If you have a détente, then you have no need for the weapons. And that's why the peace process is so important in the Middle East. If they feel that, yes, we are now decided to go for peace, then there will be less feel of a need for nuclear weapons. But at the same time, they are not convinced, they are not 100 per cent convinced, so they say, like Reagan said, "Trust, but verify". And so you need the verification to give the confidence that there is actually nothing hidden.

DERGHAM: But you cannot provide such verification, IAEA cannot have access to the facilities in Israel, for example. The Arab states are saying, fine, let us -- we're all opened up to NPT, then what about the Israelis? And there's -- there are -- there are also countries who are speaking peace with Israel, we're speaking about even Egypt that

has a peace treaty with Israel. So what are you doing about that? What could be done about it?

BLIX: They don't have so much to open up as Israel has to open up. And I think the first step in the process is the one they are engaged in now, that's to say a peace process. And as a part of that process I think you'll have to have an agreement of doing away with the nuclear weapons and a full verification.

DERGHAM: So you have no plans, you have nothing to offer.

BLIX: We are discussing with them what kind of verification system should there be. Because we are not negotiating a peace treaty for anybody else. But we might well be involved in one way or the other with verification, and in the field of verification we are experts.

NGUYEN: Dr. Blix, the Non-Proliferation Treaty will expire in 1995. What are the prospects for prolonging it?

BLIX: Well, I'm confident that there will be a prolongation. But the discussion now is will there be a prolongation for an indefinite period of time, or will it be for a specific period of time, with specific periods of time. And this, I cannot tell you what the eventual result will be. I know what the issues are. One traditional issue from the side of many countries is that the nuclear-weapon states have not done enough of their bargain, that they should provide more disarmament, and notably, of course, a complete test ban agreement. I think it would be very helpful to the NPT prolongation if the nuclear-weapon states had at least come a long way towards a complete test ban by the time of next spring. But also such other things as a cut-off agreement on no more production of fissionable material for weapons purposes -- this is important.

LITTLEJOHNS: Mr. Blix, we have less than a minute left. What's your assessment for the future in the nuclear area?

BLIX: I'm optimistic that the world is walking away from the nuclear weapons option. And I think that the big problems of the next century will be development and will be environment. And I think it's very important that the world keep the nuclear power option open for development.

LITTLEJOHNS: And nuclear disarmament will progress, you think?

BLIX: I think we will go along fairly fast. We have accelerated in the last few years, and I'm optimistic that that will continue.

LITTLEJOHNS: Mr. Blix, that's all the time we have. Thank you for being with us on this edition of World Chronicle. Our guest has been Hans Blix, Director-General of the International Atomic Energy Agency. He was interviewed by Tuyet Nguyen of United Press International and Raghida Dergham of *Al-Hayat* of London. I'm Michael

Littlejohns. Thank you for joining us. We invite you to be with us for the next edition of World Chronicle.

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